MUSEUM ALLIANCE

QUARTERLY

LOS ANGELES COUNTY MUSEUM OF NATURAL HISTORY
VOL. 6 NO. 4
SPRING ISSUE 1968



MUSEUM ALLIANCE

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6th Annual Meeting-1968

The Annual Meeting for 1968 was held in the Main Foyer of the Museum on May 27th.

Professor William J. Morris, Associate Professor of Geology, Occidental College, and a Research Associate in the Vertebrate Paleontology Section of the Los Angeles County Museum of Natural History, spoke on "Dinosaur Hunting in Darkest Baja."

In addition to the usual business, including the election of new board members and committee reports, awards for outstanding volunteer service were presented to nine women.

The meeting was under the chairmanship of Mrs. Mortimer Kline, with the assistance of Mrs. John E. Mack, and Mrs. Robert Edwards, Hospitality Chairman.

Flying Carpet Tours of several galleries were conducted by members of the Docent Roundtable at the conclusion of the meeting. The tours included the new Hildegarde Howard Cenozoic Hall recently opened by the Earth Science Division.





Photography by Armando Solis

May 14 - August 25, 1968
Ground Floor Changing Exhibit Gallery

Young people in gayly colored costumes, tousle-haired youngsters with great dark eyes, tired and lined faces, crowded outdoor markets with women sitting behind neat piles of fruits, a back drop of Mayan profiles, bare feet, straw hats, baskets and pots, lights and shadows — the life of Mexico is pictured with the artistry of Armando Solis. The massive architecture of such ancient peoples as the Mayans and Aztecs and the Mexico of today have been captured by his camera.

Mr. Solis has been a photographer at the Museum since 1958. He is a musician of great skill with the saxaphone and a composer and arranger as well. However, his hobby of photography has gradually become an important part of his life. Without formal training, he has developed his hobby into a profession until he was able to undertake ths difficult work of a Museum photographer.

His wife, Mildred, is an anthropologist at Los Angeles Valley College. Mr. and Mrs. Solis have traveled together on field and vacation trips into Mexico for several years. Through these trips he has become interested in the people, artifacts and history of Mexico. He has used his great photographic talent to capture the life and moods of Mexico on film.

Many of the photographs were taken in such places as San Cristobal, Oaxaca, Chiapas, Yucatan, Tzintzuntzan, Itxlan del Rio and Cases Grandes. There are both black and white and color prints in this one-man show.

The pictures may be viewed between May 14 and August 25 in the central Ground Floor Exhibit Gallery at the Museum.

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MUSEUM ALLIANCE

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LOS ANGELES COUNTY MUSEUM
OF NATURAL HISTORY
VOL. 6 NO. 4 SPRING ISSUE 1968

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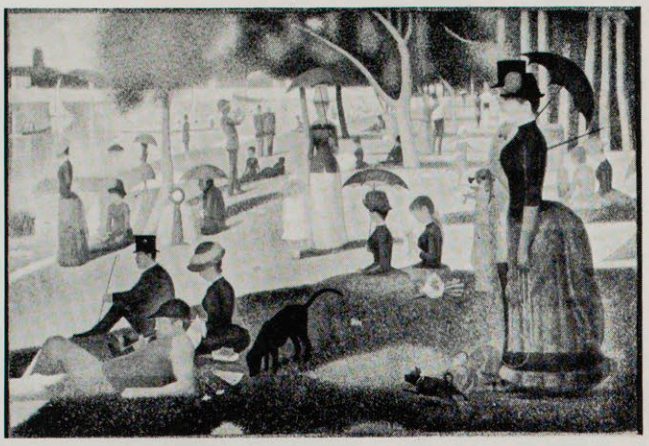
Butterfly Wings

Living Pointillism

Lastly his shinie wings as silver bright,
Painted with thousand colours passing farre
All painters skill, he did about him dight:
Not halfe so manie sundrie colours arre
In Iris bowe; ne heven doth shine so bright,
Distinguished with manie a twinckling starre;
Nor Junoes bird, in her ey-spotted traine,
So many goodly colours doth containe.

SPENSER — *Muiopotmos.*

by **Charles L. Hogue**
Curator of Entomology





Seurat's best known work, "A Sunday Afternoon on the Island of La Grande Jatte, is 7 by 10 feet in dimension. Because of its immensity, one must view it from some distance to gain the full effect of optical blending of the thousands of tiny spots of color (visible in detail below) which went into its "construction." (Reproduced with the permission of the Art Institute of Chicago.)





The pattern of all butterflies is a mosaic composition of tiny wing scales barely visible in this photograph (**Salamis aethiops** from Africa) in which a metallic color (violet on right) has been separated from non-metallic (left) by lowering the angle of incident light and directing it from one side only.

Photography by Armando Solis



Georges Seurat has been described as "the most systematic painter who ever lived." He covered his canvasses not in the free and daring style of his contemporary neo-impressionist, Van Gogh, but by following a meticulous, almost mechanistic, technique based on scientific principles of color and form perception. The unique element of this technique (variously known as pointillism, divisionism or chromo-luminarism) and that which characterized Seurat's most famous works plays on the physiological mechanism of the human eye.

Because the color sensing surface on the inner surface of our eyeball is composed of thousands of discriminate units —single nerve cells called cones—images received are split up into many fine points. That we do not see these images as a network of points but as a smooth picture we owe to the integrating ability of the brain.

The process is identical to that permitting photolithographic reproduction of color illustrations. The original is copied by photographing it through a half-tone screen which has the effect of breaking up the picture into a field of fine dots: smaller or no dots in lighter areas, larger or coalesced dots in darker areas. (At the same time filters separate the primary colors). Engravings made with these photographs transfer colored inks to the paper on minute raised points corresponding to the fine dots. Color television and spatter painting succeed likewise. To a person viewing images constructed by these means, the dots are not apparent; his sense of vision fuses them imperceptibly into all the blends and pure hues of color in the original.

Seurat painted in much the same way. First scrutinizing his model through squinted eyes, he attempted to analyse the exact proportions of the various component tints of its colors. He looked for reds in greens, purples in yellow and for all the subtleties of luminance, brilliance and life that the less acute senses of the non-artist would miss. After isolating each of these elements in his mind and experimenting with them on charcoal paper and in trial paintings, with mechanical precision he applied them finally to canvas as myriads of small dots or flicks of paint in such a way that their optical blending would produce not only the hue, but the "vibration" of color he wanted.

I think that the wings of a butterfly or moth please the human eye for much the same reason as a Seurat masterpiece. In addition to the unbelievable brilliance of many of their pure colors, different hues are contrastingly combined and blended in almost breathtaking designs. And the effects are always created, in the true pointillistic manner, by the allegiance of thousands of color points—the microscopic scales covering the otherwise transparent wing membrane on both upper and lower surfaces. Abrade a butterfly's wing between your fingers and the scales rub off like powder leaving a colorless, transparent scar.

These scales are actually modified hairs which probably functioned as sense organs on the wings of the remote ancestors of the Lepidoptera. To butterflies and moths these flattened, shingled structures no longer act as perceptors, but as "molecules of color" compounding a mosaic which serves the insect in a variety of other ways. Some colors, especially bright and gaudy ones, frighten or warn potential predators of a mal-tasting species; others mimic the patterns of such inedible types; a great many simulate tree bark, leaves, stones or other inanimate objects; and still others play a role in sexual behavior.

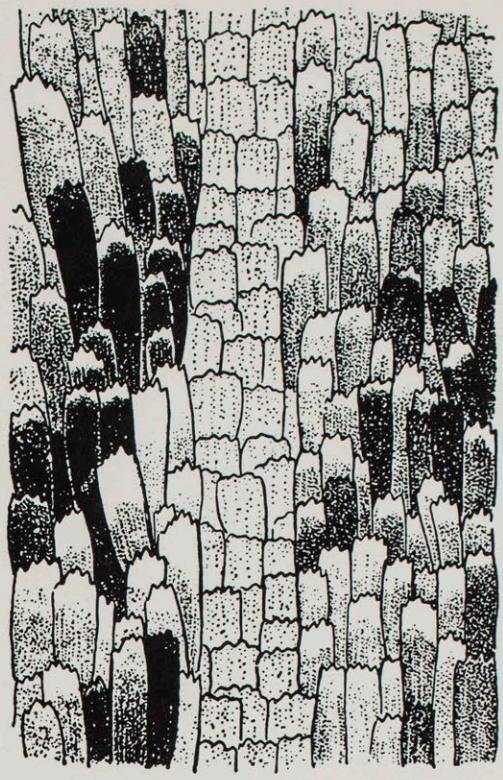
The colors of butterflies, which can generally be categorized as metallic or non-metallic (iridescent or glossy), are determined by the submicroscopic structure and chemistry of the individual scales. Pigments such as carotin (yellow-orange) or melanin (black) produce relatively dull, non-iridescent or non-reflective colors when present in the scale. The most spectacular metallic colors usually result from the special interference or diffraction of light waves passing through some periodic structure in the scale. The same phenomenon produces the swirling displays of color in oil films or in the well-known Newton's rings. The dazzling blue of the Morpho butterfly appears when light rays are qualified by passage through oblique periodic lamination in the glass-like vertical ridges of the scales (see diagram) while the emerald green of the Urania moth derives from light interference by numerous thin horizontally superimposed plates covering the surface of each scale.

Interference colors can be modified by altering the angle of viewing or origin of light. If this is done rapidly, the surface can be caused to shimmer. These colors also may be temporarily destroyed by changing the physical arrangement of the scale's micro-structure—wetting a Morpho's wing with alcohol, for example, fills the minute spaces between the verticle lamellae and prevents the normal transcendence of light. The blue is replaced by a dirty grey-brown and returns only after the fluid has dried.

More than 100,000 species of butterflies and moths combine and recombine the arrangement of the tinted flakes on their wings into an infinite variety of compositions. Of these, there is room on these pages to show you only a few. View them and ask, "Who is the master pointillist painter, Nature or Seurat?"

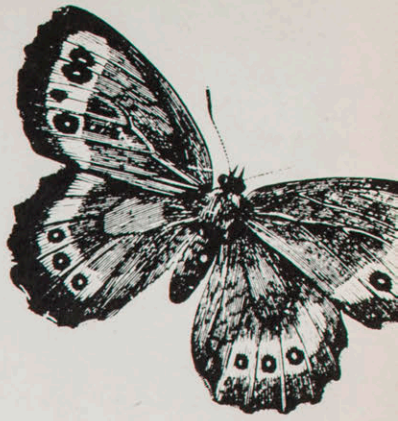


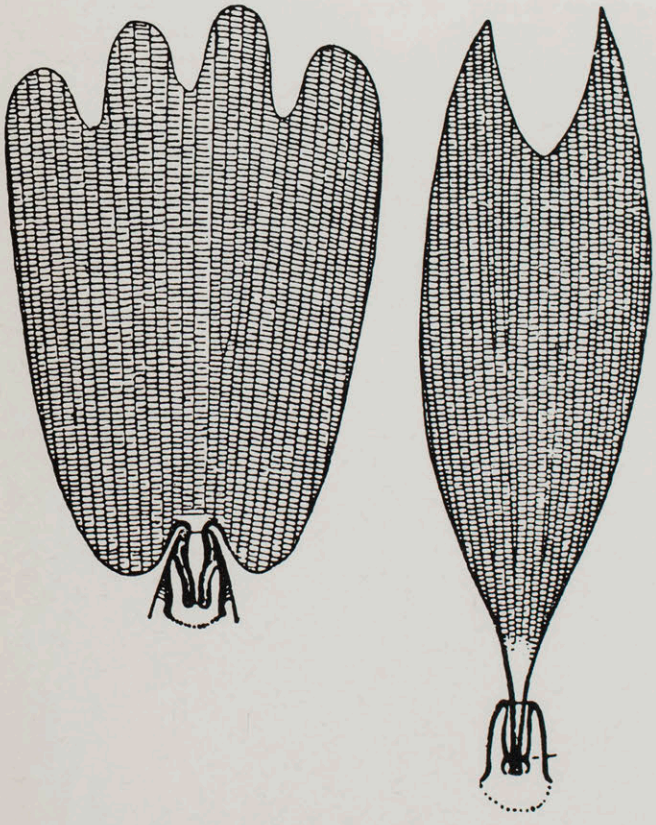
"Both figures from Weber, reproduced through courtesy G. Fischer Verlag."



F

Magnified section of butterfly wing showing overlapping arrangement of scales.





G

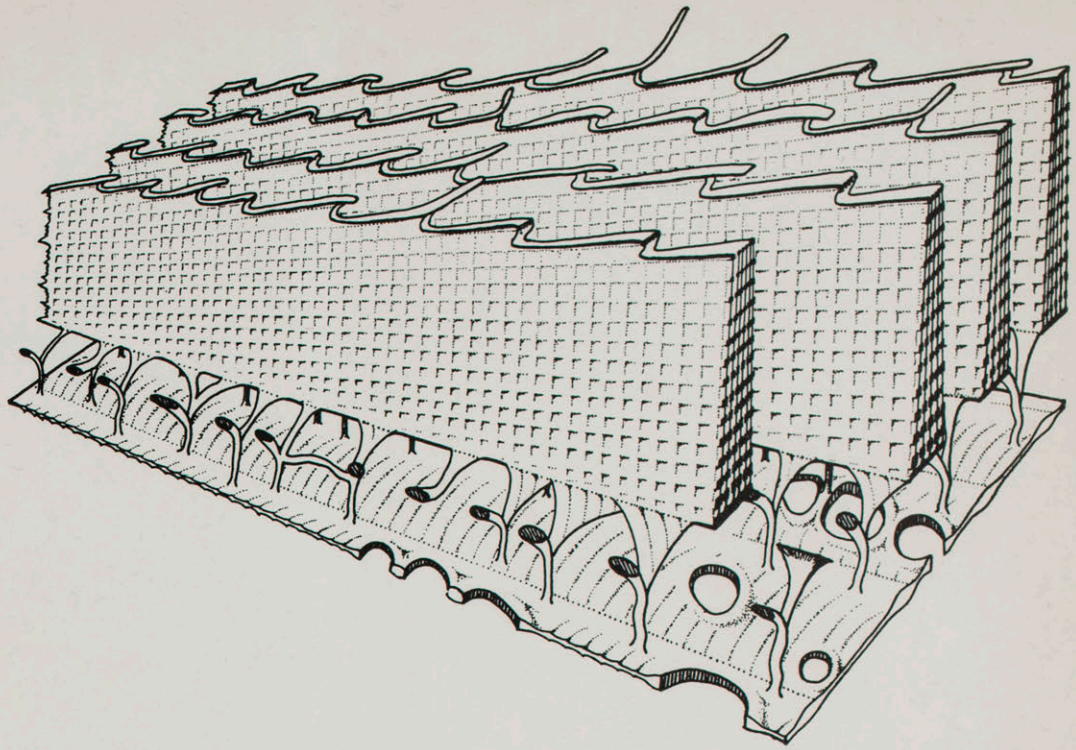
Individual scales with general pattern of ribbing and ridges evident.











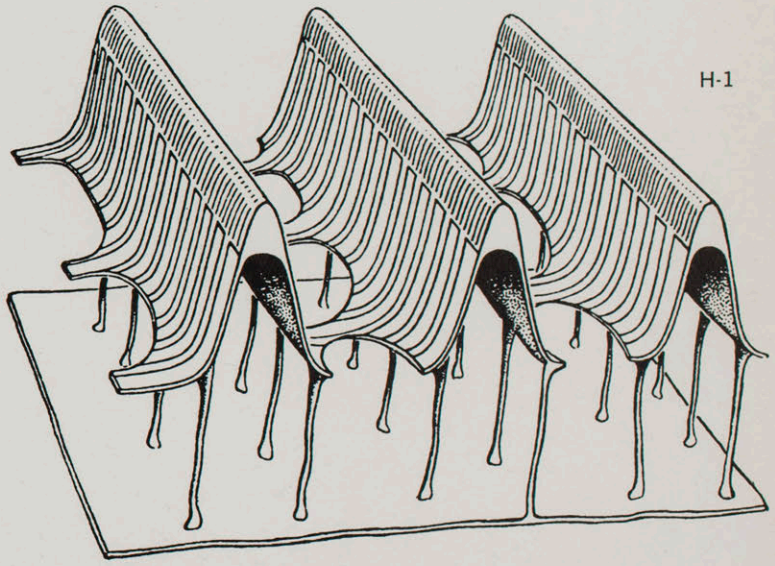
H-2

Montage – **Attacus atlas** (Asia) on background of various blue butterflies.

Montage – **Teinopalpus imperialis** (India) on **Charaxes** (Africa) on **Panacea prola** (South America).

Diagrams reconstructed from electron photomicrographs of sections of individual wing scales.

Complex light-breaking ribs composed of thin, parallel fenertrate vanes generally giving rise to metallic colors.
"From Anderson & Richards."

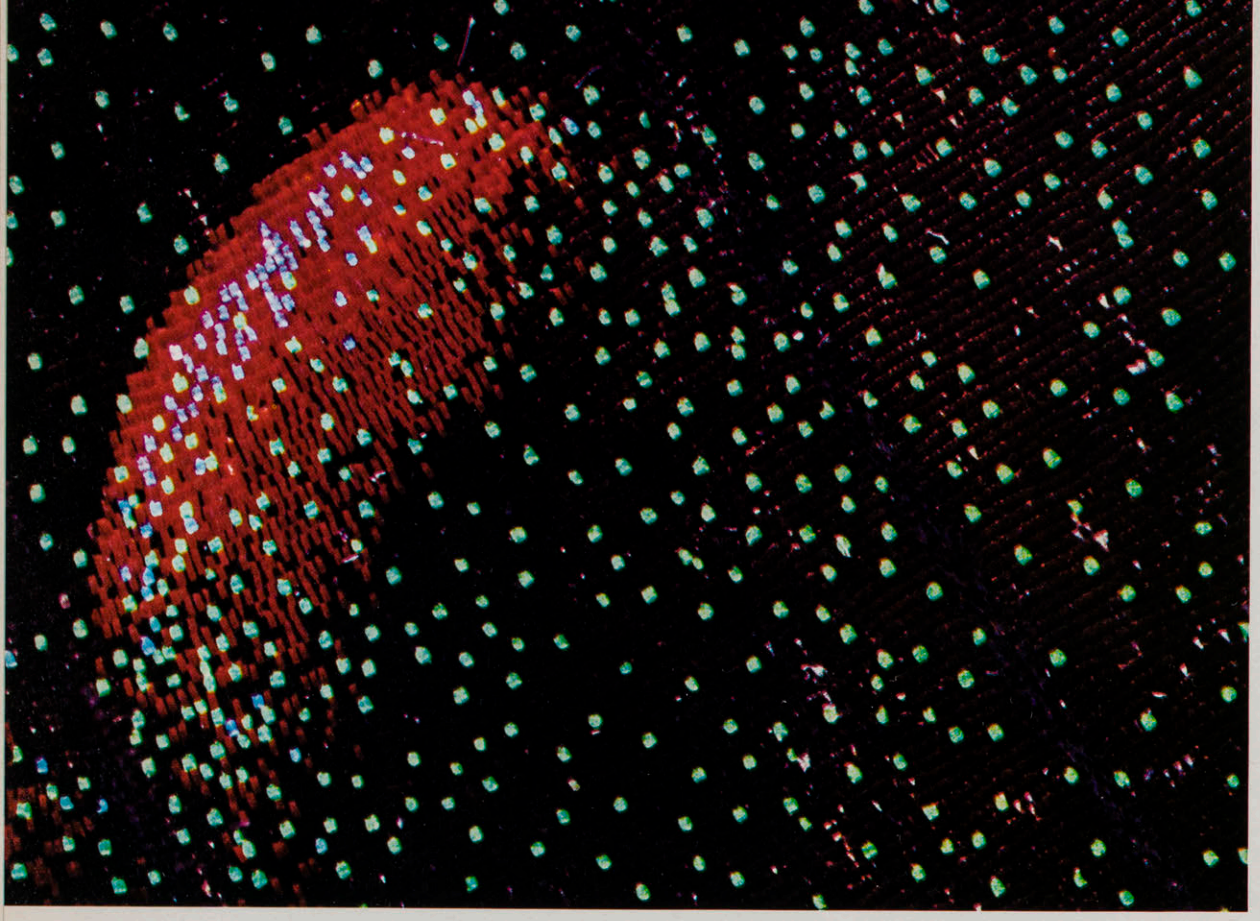


H-1

Montage – **Papilio arcturus** (India) on **Morpho melelaus** (South America).

Montage – **Cyrestis thyodamus** (India) on **Attacus atlas** (Asia).

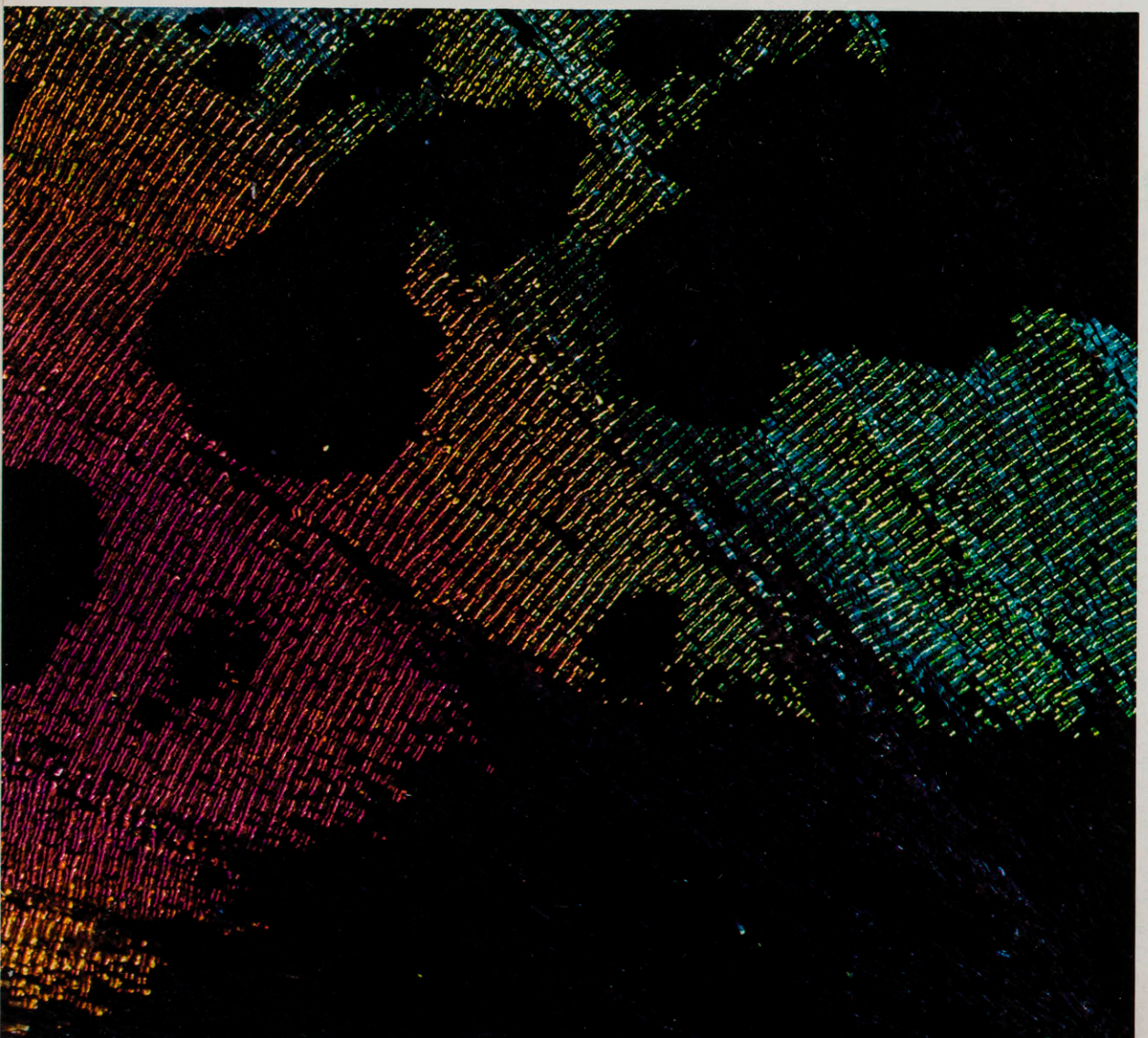
Simple undulating ribs containing pigments producing non-metallic colors.
"From Weber, reproduced through courtesy G. Fischer Verlag."



Heavenly Bodies – **Papilio arcturus** – India.

Hurricane – **Caligo memnon** – Tropical America.

Navaho – **Charaxes epijasius** – Africa.

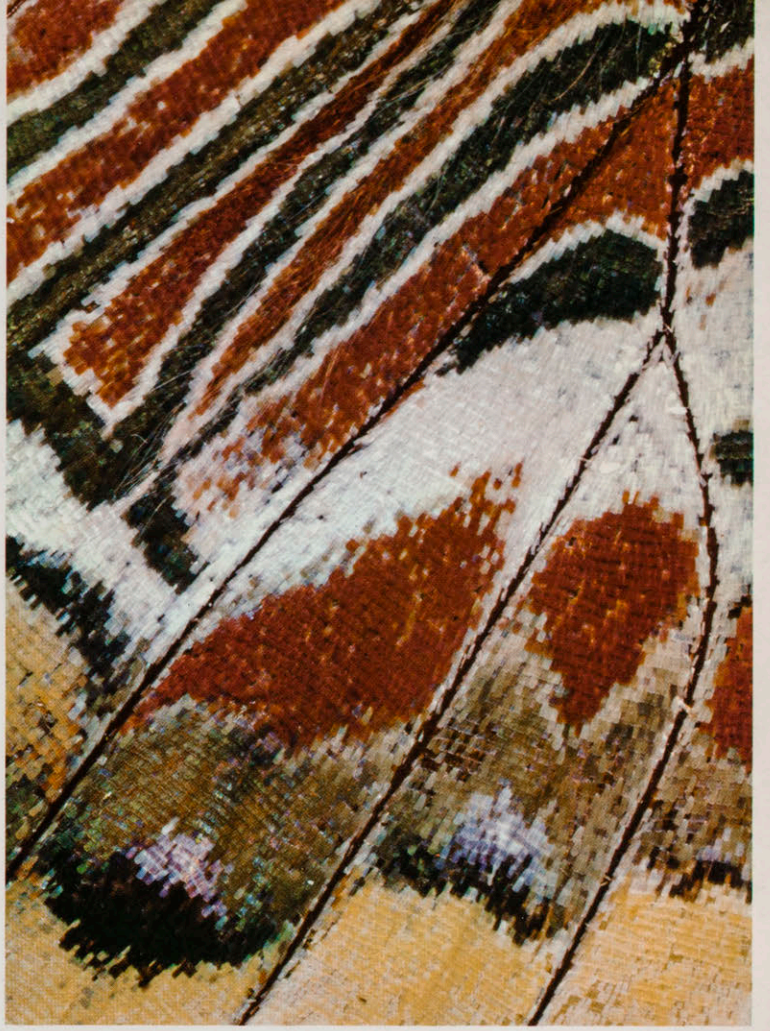


Voodoo – **Catagramma** – Tropical America.

Blue Nouveau—**Ageronia feronia** – Tropical America.

Arctic Sky – **Urania rhephius** – Madagascar.



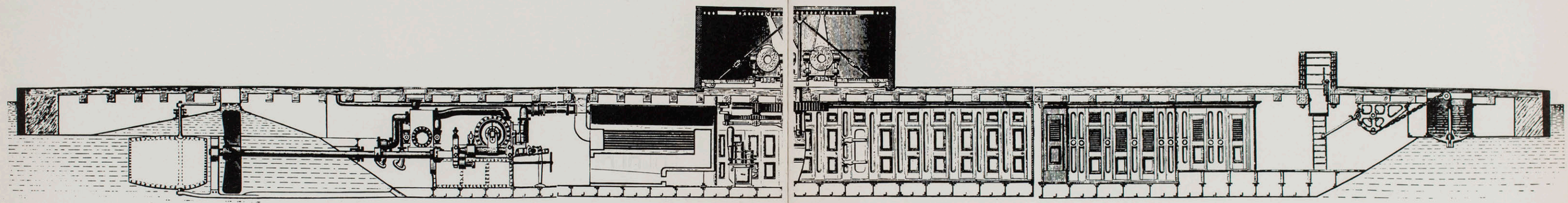






AN EYEWITNESS TO HISTORY

by **CHARLES S. SCHWARTZ**
Research Associate
in Military History



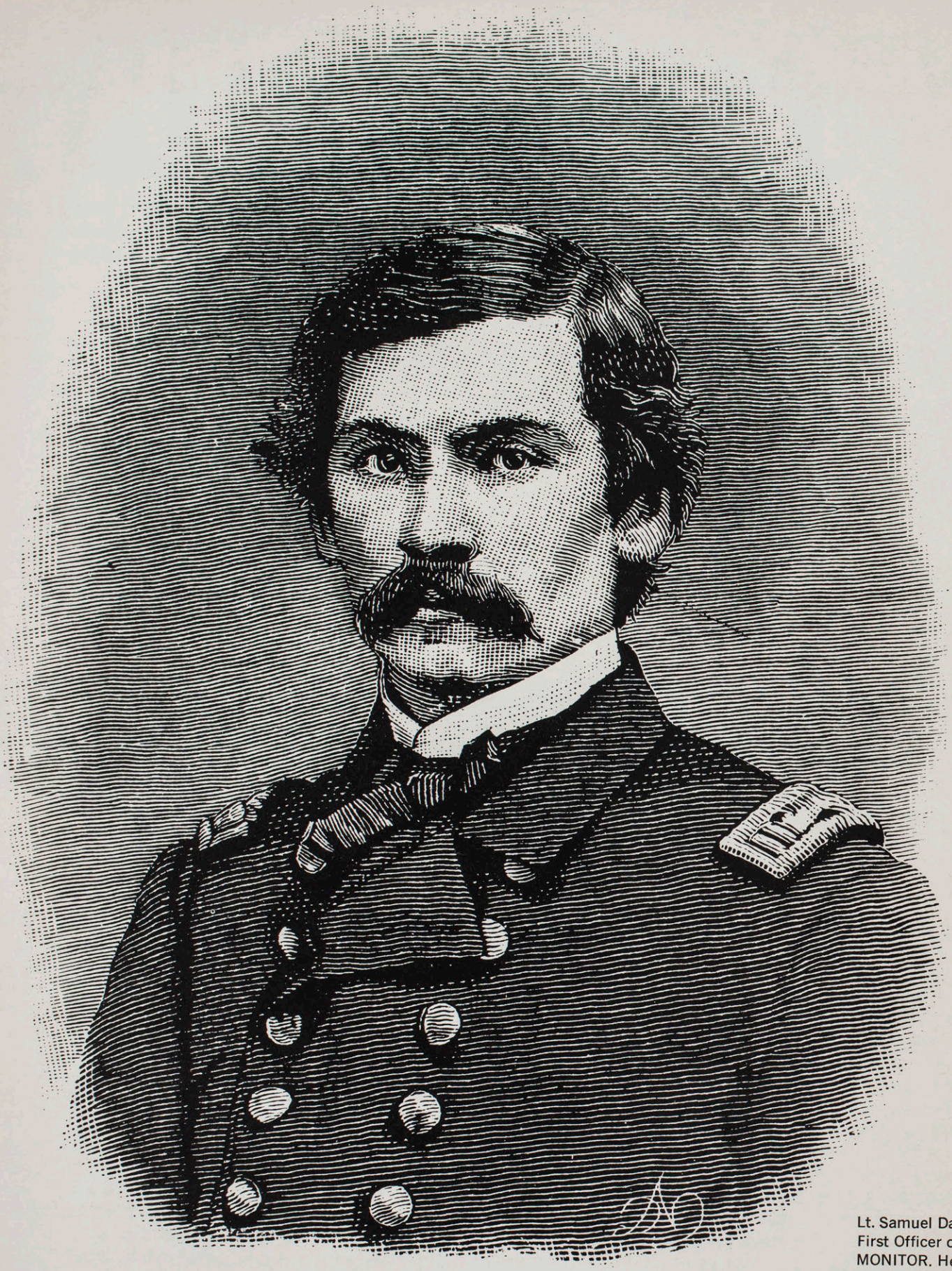
The History Division of the Los Angeles County Museum of Natural History has recently acquired a letter unique in the history of the United States. The writer, a slim, intense, black-mustached young man just turned twenty-two, wrote this letter in the tiny ward-room of one of the most famous ships ever to fly the United States flag — the **U.S.S. Monitor.** It was Friday, March 14th, 1862 and the preceding Sunday, March 9th, Lt. Samuel Dana Greene had his rendezvous with history when, as executive officer of the ship, he acted in the capacity of gunnery officer and directed the fire of the two eleven-inch Dahlgren, smooth-bore shell guns (the ship's only armament) against a powerful antagonist — the Confederate iron-clad ram **Merrimac.***

For the first time in the history of naval warfare, two fully armored ships had engaged each other in battle and no one was better qualified to describe the engagement than the young man whom fate had decreed was to command the guns of the **Monitor.** Samuel Greene, a Rhode Islander, was born at Cumberland, Maryland. He was a descendant of Major-General Nathaneal Greene of Revolutionary War fame and second son of Major-General George Sears Greene whose likeness surmounts an impressive monument on the Gettysburg Battlefield where, less than a year and a half after his son's exploit in Hampton Roads, he too helped make United States history. Sam's two younger brothers each served with distinction in the United States Army — Charles Greene attaining the rank of major in the Civil War (and losing a leg in the process) and Francis Vinton Greene who eventually retired from the Army with the rank of major-general, the same rank attained by his father.

Whereas both Generals Greene were graduates of the United States Military Academy, young Sam elected to serve in the Navy and graduated from the Naval Academy at Annapolis, Maryland in June, 1859, seventh in his class. It is interesting to note that this was also the graduating class of Alfred Thayer Mahan, latter-day apostle of naval power. While serving three years as a midshipman in the old "Sailing Navy" aboard the (soon to be famous) **Hartford,** young Sam Greene learned of the construction of an iron-clad naval ship being built at Greenpoint, Long Island by the well-known Swedish enginering genius, John Ericsson. It is known that Greene expressed an interest in the so-called "Ericsson Battery" as early as January, 1862, when she was still on the stocks at Greenpoint and even before Lt. Worden had been ordered to her. However, he had been commissioned a lieutenant in August of 1861 and when he learned that a qualified executive officer (second in command) was being sought by Lt. Worden (recently released from a Confederate prison), Sam unhesitatingly volunteered. He was one of only four of the ship's original commissioned personnel to serve in her from her commissioning to her untimely loss, in a hurricane off the Diamond Shoals of Cape Hatteras on New Year's Eve, 1862. He literally served in the **Monitor** from her birth to her death.

The **Monitor** was a tiny ship by even the standards of the day. She was only one hundred seventy-two feet overall in length, a beam of forty-one feet, six inches and drawing only ten feet, six inches of water. With a total displacement of approximately nine hundred eighty-seven tons she had an enlisted crew of forty-eight men of various ratings, and ten officers, including a paymaster and surgeon who were **all** volunteers. Her armament consisted of two (for the time) mammoth eleven inch smooth-bore, muzzle-loading cannon enclosed in a rotating circular iron turret twenty feet in diameter (on the inside) and nine feet high with walls eight inches thick. In the course of the engagement with the **Merrimac**, so dramatically described by Lt. Greene in his letter to his parents, a total of twenty men served the two seventeen thousand pound cannon with temperatures in the small airless turret approaching 140°!

During the now famous engagement, which made history in less than three and one-half hours and in which neither ship proved able to materially damage the other, Lt. Worden, the Captain of the **Monitor,** was wounded in the face by a shell exploding in front of the small pilothouse — whereby the command of the ship devolved upon twenty-two year old Sam Greene. Sam describes it in the



Lt. Samuel Dana Greene, First Officer of the MONITOR. He is shown wearing the shoulder straps of a Federal Naval Lieutenant.

AN EYEWITNESS TO HISTORY

letter as follows: ". . . I went forward and there stood as noble a man as lives, at the foot of the ladder of the pilot house. His face was perfectly black with powder and iron, and he was apparently perfectly blind . . . he told me to take charge of the ship and use my own discretion." Greene commanded the little ship throughout the remainder of the engagement and, viewed from the perspective of over one hundred years, did so remarkably well. The two ships never met again and soon after, on May 11th, the **Merrimac** was destroyed by her crew to keep her from falling into the hands of Federal forces when the Norfolk Navy Yard (where she was built and birthed) surrendered to Union land forces. Following the engagement of March 9th, the little **Monitor,** overnight, became the toast of the country. Commendations poured in upon her (a piece of music, "The Monitor Grand March," was hastily composed) and celebrities visited her, including no less a personage than the President himself. Lt. Worden and his officers and crew were lionized beyond all imagination. But Sam Greene's tenure as commanding officer of the **Monitor** was very short lived, as the day after the engagement, March 10th, he received the following letter from Gustavus A. Fox, Assistant Secretary of the Navy:

"My Dear Mr. Greene, Under the extraordinary circumstances of the contest of yesterday, and the responsibility devolving upon me, and your extreme youth, I have suggested to Capt. Marston, to send on board the Monitor, as temporary Commanding Lt. Selfridge, until the arrival of Commodore Goldsborough which will be in a few days. I appreciate your position and you must appreciate mine, and serve with the same zeal and fidelity. With the kindest wishes for you all

Most Truly
G. A. Fox"

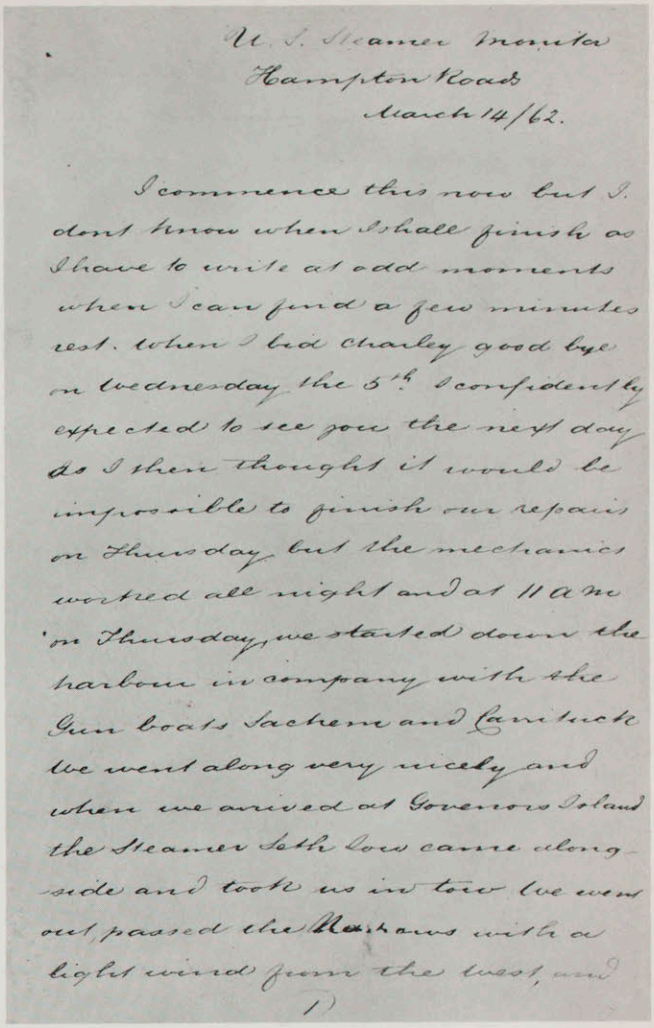
Three commanding officers followed Lt. Selfridge, but Greene was still executive officer and second-in-command on the tragic night of December 31, 1862, when the little ship went down, taking with her a total of sixteen officers and crew. It is questionable whether the loss of any ship in the United States Navy, even in the course of many subsequent wars, has resulted in the nation-wide mourning that followed the announce-



ment of her sinking. It was headline news throughout the entire country. Samuel Greene survived "to fight another day" and we learn from his service record that he served the remainder of the War as executive officer of first the **Florida** and later, the **Iroquois.** He was promoted to lieutenant-commander in 1866 and full-commander in 1872. In this rank he served as commanding officer of the **Juniata,** the **Monongahela,** and the **Despatch.** At one time or another he served as a member of the faculty of the Naval Academy, first as assistant professor of mathematics and, later, of astronomy. From 1878 to 1882 he was assistant to the Superintendent of the Academy.

On December 11, 1884, while serving at the Navy Yard, Portsmouth, New Hampshire, twenty-two years, nine months and two days after that exciting and momentous day in Hampton Roads, Virginia, when he and fifty-seven other brave men made naval history, Samuel Dana Greene committed suicide. This writer has been unable to unearth any indication of what could possibly have driven him to such an act. The service record reads simply "Died at the Navy Yard, Portsmouth, New Hampshire," followed by reference to a letter by his commanding officer.

There is this footnote to the story. In 1887 there was published the monumental **Battles and Leaders of the Civil War** wherein various participants in the War literally wrote their own stories. In Volume I, page 719, may be found the following narrative, "In the Monitor Turret," by S. Dana Greene, Commander, U.S.N. Executive Officer of the **Monitor.** A careful reading of the article (and not a word of its conflicts with anything in his letter of March 14, 1862) would suggest that Greene was attempting to defend his actions both as gunnery-officer in the early part of the engagement and, later, as Commanding Officer. It is a fact that in the years following the War he was subjected to a considerable amount of criticism by many whose qualifications to criticize are questionable, to say the least, and there are records of occasions when his former Commanding Officer, (now) Captain Worden, was forced to come to his de-



U. S. Steamer Monitor
Hampton Roads
March 14/62.

I commence this now but I dont know when I shall finish as I have to write at odd moments when I can find a few minutes rest. when I bid Charley good bye on Wednesday the 5th I confidently expected to see you the next day as I then thought it would be impossible to finish our repairs on Thursday but the mechanics worked all night and at 11 AM on Thursday we started down the harbour in company with the Gun boats Sachem and Zouave we went along very nicely and when we arrived at Govenors Island the Steamer Seth Low came alongside and took us in tow we went out, passed the Rip Raps with a light wind from the west, and

Taken several months after the engagement, this photo shows Lt. Worden inspecting battle damage to the MONITOR turret.

fense. For example, although **Battles and Leaders** was published some three years after his untimely death, the following statement appears at the end of Greene's lengthy article:

"Of the services of Mr. Greene in connection with the **Monitor,** Captain Worden made the following official record in a letter to the Secretary of the Navy:

" 'I was ordered to her (the **Monitor**) on the 13th of January, 1862, when she was still on the stocks. Prior to that date Lieutenant S. D. Greene had interested himself in her and thoroughly examined her construction and design and informed himself as to her qualities, and, nothwithstanding the many gloomy predictions of naval officers and officers of the mercantile marine as to the great probability of her sinking at sea, volunteered to go in her, and, at my request, was ordered. From the date of his orders he applied himself unremittingly and intelligently to the study of her peculiar qualities and to her fitting and equipment . . . Lieutenant Greene, after taking his place in the pilot-house and finding the injuries there less serious than I had supposed, had turned the vessel's head again in the direction of the enemy to continue the engagement; but before he could get at close quarters with her, she retired. He therefore very properly returned to the **Minnesota** and lay by her until she floated . . . Lieutenant Greene, the executive officer, had charge in the turret, and handled the guns with great courage, coolness, and skill; and throughout the engagement, as in the equipment of the vessel and on her passage to Hampton Roads, he exhibited an earnest devotion to duty unsurpassed in my experience.' "

* The **Merrimac** was originally the U.S. **Steam Frigate Merrimac,** commissioned in 1856 and equipped with an awesome battery of fourteen eight-inch, two ten-inch and twenty-four nine-inch guns. She was one of the most modern and powerful naval ships in the world and the prototype vessel of five other almost identical ships. She was "in ordinary," awaiting repairs in Norfolk Navy Yard, when it was evacuated by Federal troops on April 20, 1861, and was scuttled and sunk to keep her from falling into Confederate hands. The Confederates succeeded in raising her; she was rebuilt as a powerful ironclad ram and renamed the **Virginia.** However she is still referred to as the **Merrimac,** probably because of the alliteration with the name of her famous antagonist, the **Monitor.**

Officers of the MONITOR.
Lt. John L. Worden,
Captain of the MONITOR
seated in the center;
Lt. Samuel Dana Greene
seated at right in the
first row with legs crossed.

The volunteer crew of
the MONITOR assembled
on deck. Due to the
excessive heat below
decks meals were fre-
quently prepared as
shown. The volunteer
crew included Negro seamen.



W.H.D Koerner

Illustrator of the West 1828-1938

Catalog available.

William Henry David Koerner, the son of German immigrants from Schleswig-Holstein, spent his first sixteen years in Iowa. From this rural life, he moved to Chicago where he obtained a position on the **Tribune** as a staff artist.

1905 found him working in New York where he was able to profit by classes with George Bridgman at the Art Student's League and sessions with Howard Pyle, dean of American illustrators.

Five years later, after doing a cover for **Harper's Weekly,** he established himself in the field of illustration for which he would ultimately become known. Here, too, he showed his concern for authenticity through research in libraries and museums and by vacations in the western wilderness.

While he illustrated stories in such magazines as **Redbook, Good Housekeeping, Scribner's, Harper's Weekly** and many more, he is probably best remembered by readers of the **Saturday Evening Post.** Of the authors, with whom his name is intimately associated, three stand out—Emerson Hough, Stewart Edward White and Eugene Manlove Rhodes.

His last commissions were in 1936, when failing health caused him to lay aside his brush. He passed away on August 11, 1938 at his home in Interlaken, New Jersey.

His heritage to the world is a large collection of oils, crayons, charcoals and watercolors, as well as his sketchbooks and notebooks. These have been carefully preserved by his daughter, Mrs. Ruth Koerner Oliver, and it is with her cooperation that the History Division has been able to present an exhibition of his works.

THE MINERALS OF L.A. COUNTY

By **Veryle Carnahan**
Mineral Research Society

Santa Monica Mountains

A Textbook of Mineralogy, published in 1883, has listed in the appendix, A Catalogue of American Localities of Minerals. The foreword noted that the catalog "may aid the mineralogical tourist in selecting his ruóte and arranging the plan of his journey." The author, James D. Dana (1813-1895), warned that "only important localities, which have afforded cabinet specimens, are in general included, and many localities have been exhausted."

Under the heading of Los Angeles County, was listed chalcedony at Williams Pass (Soledad Canyon) and magnesite at the Canada de las Uvas (the Grapevine). The place names may not be familiar today, but the mineral doposits in many instances are far from exhausted, and offer much to interest the serious collector who will seek them out.

Investigation of the geology of the county was apparently initiated by William Phipps Blake, (1826-1910), a graduate of Yale, who left an informative account of his explorations that remain classics of mineralogical literature. His comprehensive observations, though accomplished under conditions of hardship and privation, include not only the geology and mineralization of the county but a graphic description of everyday life in the areas he visited.

In 1853 Blake and his party camped under some big fig trees on the banks of a tributary of the Los Angeles River. After leaving the camp he traveled through the Cahuenga Pass and in a description of the geology of the Sierra Santa Monica he noted, "I found an outcrop of erupted rock, which was much obscured by decomposition but showed a globular character, the bank being filled with balls of various sizes. It had a dark color and contained considerable oxide of iron, indicated by the dark stain."

Blake might have recorded a description of the basalt in the zeolitic area of the mountains as it appears today. In Part One of this account of the Minerals of Los Angeles County, the vesicular or cavity-filled basalt in which the zeolites of Tick Canyon formed, was described. When the basalt weathers away or deteriorates, the amygdules, or almond shaped "balls" would be released. The hard outer shell of the amygdules formed the inner lining of the vesicle and was much more resistant to weathering. The amygdules may be hollow and lined with zeolites, calcite, quartz or chalcedony.

These formations are hunted by collectors in several locations in the Santa Monica Mountains today, including the road cuts and quarries near Agoura and the brush covered canyons of Griffith Park.

Griffith Park, at the eastern end of the Santa Monica Mountains, named for the donor Griffith J. Griffith, is today an area of over four thousand acres, three-fourth of which is rugged mountainous terrain. The park is on the site of the old Spanish land grant, El Rancho de Los Feliz. The area was granted to Vincente Felis, corporal of the soldier guard for the founders of Los Angeles.

Concrete aggregate and road metal were quarried in two places in the park between 1913 and 1929. The Mexicans are rumoured to have had a gold mine in the area, but history records they mined and calcined a small amount of calcite on the site, a more likely venture. One of the quarries is used occasionally for background shots in westerns by motion picture companies. Collectors have been known, at first glance, to confuse "make-believe" boulders with those of genuine basalt.

Numerous dikes of basalt are present in the park area and it is thought by the experts to have been a "major volcanic center during the middle Miocene period." In some areas the basalt can be recognized as feeder pipes of a volcano; in others the lava flow resembles a pillow and is found to be over fifty feet thick. All types of the volanic formation weather away to a "soft, brown, clayey mass." Not all of the instrusive rocks contain amgdules, but when they do it is of interest to the earth science student. The earliest mineral to form in the cavities and the most abundant is analcime, a hydrous silicate of sodium and aluminum. Thin tabular crystals of apophyllite occur as coatings on joints with greenish botryoidal crusts of prehnite. Ptilolite, a calcium-potassium-sodium zeolite occurs in clusters of needle-like crystals and thomsonite, a hydrous sodium-calcium and aluminum silicate, in white platy crystals.

Griffith Park contributed a type-locality mineral, one discovered here and described in 1917 in the Washington Academy of Science Journal. Griffithite, a hydrous magnesium-iron-calcium and aluminum silicate, occurred in dark green basal plates in the amygdules in the park basalt but has not been located by collectors today. Special mention is made of the occurance of the minerals in the shattered amygdaloidal basalt in a listing by the California Division of Mines and Geology as one of the most interesting occurances in the state.

The road cuts and old quarries hidden in the mountains near Agoura are yielding a spectacular new series of minerals for the collector of micromounts, the perfection of the crystals discovered only when observed under magnification. Vugs or cavities in the volcanic rock are filled with combinations of several minerals, beautifully crystallized: ferrierite, possibly new for California, a rare zeolite, in crystals resembling tiny tufts of satiny bows, thomsonite, heulandite and pearly plates of barite. Pyrite, iron sulfide, in many crystal forms, tarnished with a rainbow of iridescent colors, blue chalcedony, forming stalactites in tiny caverns, sagenite, iris, plume and other types of agate also have been added to the collector's bag on field trips into the area.



Gypsum 4″ x 2½″



Chalcedony
3″ x 2″





Limonite
after
Pyrite
2½″ x 1½″



Basalt Geode
with Chalcedony
Calcite & Opal
11″ x 4″

Gypsum
2″ x 2½″

San Gabriel Mountains

The San Gabriel Mountains are the dominant mountain range in Los Angeles County. It is a steep, rugged, slowly rising range with extensive erosion and deposition forming high alluvial fans in the Mojave Desert and the Los Angeles Basin. The uplifted blocks of rock form a wall which marks the northern boundary of the basin extending from Placerita canyon on the west to San Antonio Park on the east. The blocks are weakened and shattered by numerous major and minor fault zones. Much of the folding and faulting took place in the Upper Miocene period, with major activity in the Middle Pleistocene, about the time man appeared on earth, and continuing until comparatively recent times.

A few brief mentions were made of the minerals in the San Gabriels over one hundred years ago in the reports of Dr. John Boardman Trask (1824-1879), who became the first State Geologist of California in 1853. He was among the most important of the early writers on the geology of the country, calling attention to the economic importance of the work. Jules Marcou (1824-1898), came from France in 1848 and assisted William Blake in early surveys of the area. Marcou had courage and judgment but was severely criticized by American geologists. He pleaded illness and returned to Europe with most of his notes and mineral samples.

The San Gabriels are composed of a "wide variety of crystalline rocks whose origin and age relations are not yet fully understood," according to the authorities, but the beauty and rarity of the many minerals to be found are well understood by the collector. The prospectors and the miners who first delved into the veins and pockets of the mountain peaks and canyons were stirred by the mystery of the minerals too and left a poetic legacy in the names of some of the mines. The Iron Blossom — titanium; Fiber Queen — asbestos; Black Diamond — graphite; Red Feather — rhodonite; and White Crystal — dolomite, were but a few of interest reflecting some of the most important commercial deposits in the range and the ridges to the north.

The rarest of the minerals were found in a rather large gabbro pegmatite, one of the many that occur along the northern slopes of Pacoima Canyon. The dike "crops out in a roughly horizontal zone of irregularly bulging lenses which show sharp to gradational contacts with norite rock and biotite gabbro and diorite. Large books of biotite mica can be seen in the pegmatite wall with dull black blobs of magnetite. Three of the most sought after minerals are allanite, a basic calcium-iron-aluminum-cerium silicate and zircon, zirconium silicate. The allanite, in black elongated-tabular crystals, is fragile, almost always fractured because of great tensional stresses and enormous pressures exerted on the rocks in past ages. The matrix is a chatoyant variety of pink feldspar, called perthite. The associated purple crystals of zircon may become altered to brown cyrtolite, a mineral containing uranium, yttrium and other rare elements due to the presence of radio-active material. Apatite, essentially a calcium phosphate in very small, translucent, light brown crystals is abundant in the allanite pegmatite. An almost endless list of other minerals, rare and common, can be found in the dikes that transverse the rocks of the slopes or in the debris below the formations in the canyon.

Numerous bodies of titaniferous magnetite occur in the San Gabriel Mountains, thirty-six of which have been described in mining reports. The ore is a possible source of titanium, but the titanomagnetite or ilmenite-magnetite, an intergrowth of ilmenite, oxide of iron and titanium, and magnetite, iron oxide, in various proportions is almost impossible to separate. An attempt to use the ore was made in 1906 but the difficult job of separation was encountered and the project abandoned. Erosion of the ilmenite-magnetite bearing rocks released the weathering-resistant ore and the resulting black sands have been mined intermittently. The heavy black sands have been carried by streams and concentrated on sand bars and ocean beaches from Redondo Beach to Malaga Cove.

A short distance to the east of the interesting deposits of Pacoima Canyon is a canyon "very tortuous in its course, the banks extremely rugged, showing the effects of heavy denudation on its naked metamorphis rockbound sides." This description of the San Gabriel Canyon was written in 1889. There was excitement among the miners of that day when native silver combined with cobalt was discovered at the Mint and Kelsey claim. The ore was similar to ores found in Schneeberg in Saxony, a famous European Mining District. The deposit was described as "a true fissure vein, with the following minerals occuring; native silver, silve glance (argentite), chloride of silver (cerargyrite), accompanied by carbonate of copper (azurite), iron oxide (limonite), black oxide of manganese, (psilomelane)" and the writer might have added many other rare species.

The same report (1889) described a specimen of pharmacolite, a hydrous arsenate of calcium, which is a product of surface alteration of mineral deposits containing arsenopyrite or similar minerals. "The specimens are peculiar, in that they contain calcite and baryta (barite) with pharmacolite in caves, and are covered more or less by erythrite. Veins of smaltite (cobalt arsenide) run through the rock, and there are various black spots composed of sulphide of silver and arsenate of cobalt (erythrite), in which may be seen free native silver, a combination not before found in California, and we have no information it has been found in any other quarter." The samples were found in the O. K. Mine, San Gabriel Mining District, Los Angeles County, and were presented to the Mining Bureau Museum on June 25, 1889. Today the historic silver claims are in the vicinity of the Morris Dam and not accessible to collectors.

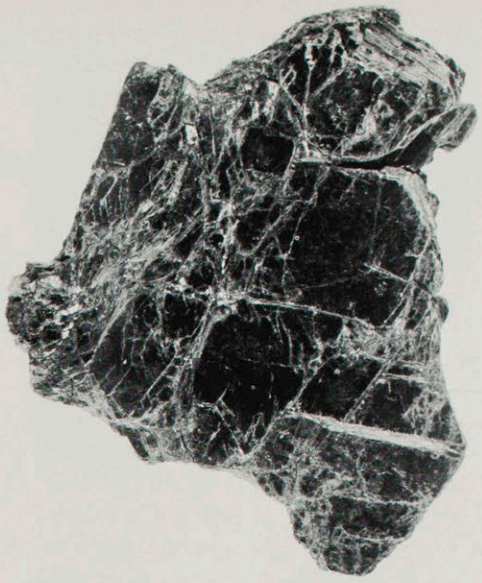
An old mine in this same area currently giving up fantastic specimens is the Felix Flourite Mine at the foot of the canyon near Azusa. Green and purple fluorite in cubes, octahedrons and dodecahedrons occur along shear zones in decomposed granite in a small prospect pit. It is almost always found in crystalline masses with some crystals in vugs. Recently large groups of crystals in beautiful shades of dark green have been discovered by a lucky collector. Associate minerals at the locality are galena, lead sulphide, minium, lead oxide, which occurs as vivid red coatings on galena and barite. Although this deposit was known as early as 1914 no commercial production of fluorite has been reported from the county.

San Gabriel Canyon was also the scene of intermittent but profitable placer mining for gold by priests of San Gabriel Mission prior to 1848, and by amateur

prospectors to the present day. The East Fork of the San Gabriel River achieved some importance in 1860 when hydraulic miners drifted down from the Mother Lode Country to help place the area high on the list of gold producers which helped finance the North's part in the Civil War. A tremendous flood in 1861 washed out the mining town of Eli Doradoville and the floods of three decades ago removed almost every trace of placer mining in the canyon. In the dark days of the depression of 1932-34 panning gold resulted in "color" worth about seventy-five cents a day. At one time over seven hundred people lived in a packing-case shack town in the canyon, earning their "bean" money sifting the gravel of the river.

Since the time of the Padres and the pioneers, California has been a land famous for its minerals and the most glamorous of these has always been gold. The most historical of the gold operations were the placers of Placerita Canyon, an area known as Santa Feliciana Canyon under the Spanish regime. The padres from the San Fernando Mission sent their Indians to work the gravels of the ancient stream beds in 1842 and perhaps as early as 1834, well before the discovery at Sutter's Mill. Experienced miners from Sonora in Mexico and then the Chinese worked the area, dry-washing because of a lack of water. Manuel Castenares in a report to the King of Spain in 1844 credited Francisco Lopez with the discovery of gold near the San Fernando Mission on March 9, 1842. The site of the Lopez discovery, "Oak of the Golden Dream" is today marked by a plaque.

A report in 1893 described the extensive deposits of gold bearing gravels. "They lie in terraces which mark successive flood plains of an ancient river which flowed to the south. The gold is generally fine, but occasionally coarse. The gravel is partly cemented by a small amount of Carbonate of life." It was pointed out by early observers that the shape of the gold found was more likely produced by the "scouring motion of the tides rather than the rolling motion of a running stream" and suggested the original body of water was not a stream but "a small lake with little current and shallow banks."





Bioxite Mica
6" x 8"

Hornblende 2½" x 2½"



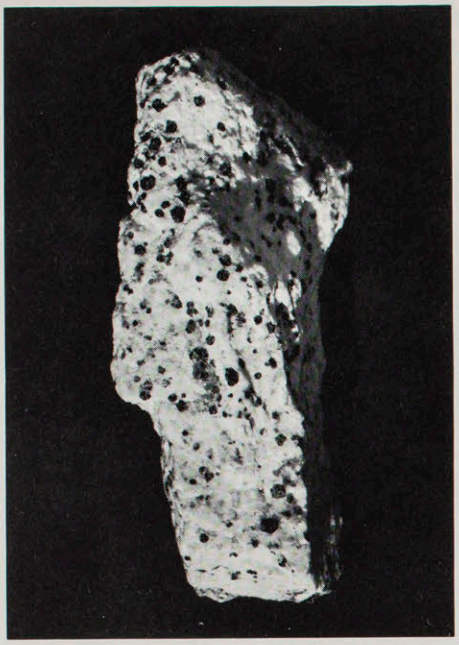
Fluorite
6" x 9"

The Northern Ridges

Several deposits of massive deep-pink rhodonite, manganese silicate, were reported on Portal or Ritter Ridges near Palmdale by P. D. Trask in his geology of California, published in 1855 in New York and London. One deposit is a manganiferous quartzite bed that averages three feet wide and traces for almost two hundred feet through the quartz-mica schist. The grains of rhodonite and spessartite garnet are partly oxidized to psilomelane, manganese oxide, and other soft black oxides, such as pyrolusite. The ore, which assayed as much as thirty to forty percent manganese, was worked during World War I by shallow diggings at some locations and by adit and shaft, now caved in, at others.

Numerous deposits of graphite are found along the northern ridges from the San Andreas fault to Lake Hughes. This mineral is interesting because it is native carbon with the same formula as the diamond. The mineral occurs in crystalline limestone, quartzite and feldspar-sillimanite-tremolite schists, all of which are metamorphosed sedimentary rocks. Much of the graphite has been formed by metamorphism or carbonaceous sediments, including coal, with the resultant crystallization of the carbon. A report on the Hughes Lake locations states, "the biotite schist is composed of orthoclase, quartz, biotite, sillimanite, muscovite, beidellite and graphite. The graphite forms elongated flakes that penetrate the quartz and feldspar." The beidellite, hydrous aluminum silicate forms patches and the sillimanite, aluminum silicate, long slender prisms that fill the fractures in the feldspar. Numerous other species occur along the northern ridges of the county including serpentine, epidote and diopside.

Los Angeles County is as rich today in mineral wealth and adventures as it was over a century ago. Over one hundred different species are found within its borders from the green radiating prisms of actinolite on Catalina Island to the pink zircon crystals from the pegmatites of Pacoima Canyon. The mineral wealth lies not in its commercial dopsits but in its value to the student of mineralogy in gaining scientific knowledge through study, and every adventure leads to new appreciation of beauty through observation.



Garnets
in Matrix
3½" x 1½"



Agate
Green and
White 8" x 6"

What is a Curator?

by **J. R. Macdonald**
Senior Curator of
Vertebrate Paleontology

Curator, n. 1. the person in charge of a museum, art collection, etc.; a custodian. **2.** a manager; overseer; superintendent. **3.** a guardian, as of a minor lunatic, etc.

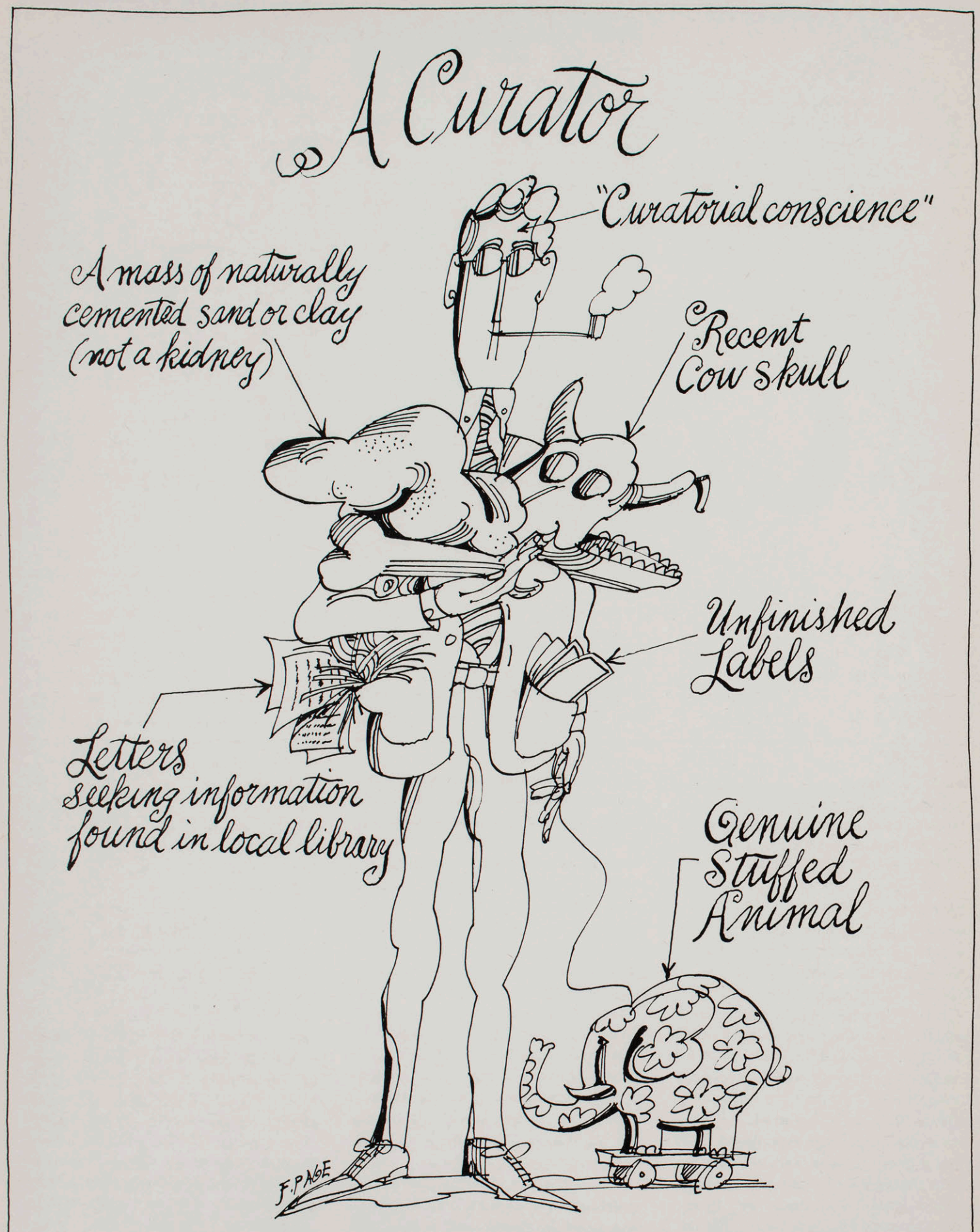
The three dictionaries by my desk vary somewhat in their definitions of the term "curator" but basically only on whether "the guardian of a minor lunatic" is of 1st, 2nd, or 3rd importance.

In today's usage where euphemisms dominate the written and spoken word, one might also construe a Curator to be a janitor, apartment house manager, or furnace stoker based on the above definitions. To clear the record, let's examine the work and background of a curator in our Museum and see what one really does in return for the County's stipend. I shall stay pretty well to my own area in this discussion . . . not because of an egocentric approach but because it is the area I know best. Other curators' problems and work are different in detail but not in broad outlines.

There are about twenty people in the Museum bearing the Curator title. Some have the prefix "Assistant," "Associate," "Senior" or "Chief" but, with the exception of "Chief," these are indications of managerial functions and seniority rather than a basic difference in responsibility. At the "Chief" level the responsibilities are totally managerial. Those in the Science Divisions with the title of Associate Curator, or higher, have both a Master's and a Doctor's degree in their specialties. This represents a minimum of seven years at a University; the PhD is essentially a minimum "union card" for a curatorial position.

A museum has three functions: 1) to collect and preserve material of historic and scientific interest for the use of present and future generations; 2) to educate and entertain the public with exhibits; and 3) to research the materials in the museum to advance and add to human knowledge.

The function of "collecting and preserving" is of primary importance (without it, functions 2 and 3 could not be performed) and is really the background for the use of the term curator in the museum sense. "Collecting and preserving" has come a long way since the days of the "Cabinets" of the eighteenth and nineteenth centuries, when collections of curiosities were stuffed into display cases in public and private "museums." Often resembling a poorly kept secondhand store, the "Cabinets" displayed mermaids, unicorn horns, petrified fish, fossil and Recent shells, dead animals (some stuffed and some mummified), butterflies, exotic and erotic objects from faraway places, and the local hero's medals and dress uniform. A side note on


A Curator
"Curatorial conscience"
A mass of naturally cemented sand or clay (not a kidney)
Recent Cow skull
Unfinished Labels
Letters seeking information found in local library
Genuine Stuffed Animal
F. PAGE

"stuffed animals": a sure way to arouse the Senior Curator of Habitat Groups to a purple rage is to refer to his exhibits as stuffed animals. Modern taxidermy is a careful blending of expert knowledge of the anatomy of animals and the sculptor's art. **Sculptadermy** is one of the terms suggested for these new techniques. You may still see "stuffed" animals in many small museums or museums with old exhibits which have not been upgraded. The modern taxidermist will insist that these were done by the "bale of hay" method. The skin is sewn around a bale of hay and then the stuffer reaches down the skin's throat with a pair of wire cutters and cuts the wires!

Today for example, without geographic and geologic data, fossil specimens are no more than curiosities. It is the curator who must obtain, refine, evaluate, collate, and document all of these data for collections of any kind in the museum. In addition, it is only through his expert knowledge that he can properly identify the material prior to entering it in the museum's record. Once obtained, collections must be stored in a logical and available manner. Museums are like libraries. The materials stored in them are the raw materials of study, research, and potential exhibits. Unless the data and the specimens are readily and logically available the studies and researches cannot be performed.

Most curators have a high sense of "Curatorial conscience." They feel that collections can never be perfectly tended, have developed the housekeeping syndrome to the point that there is a definite sense of uneasiness when they walk through a storage area or laboratory and find things out of place, and have no tolerance whatsoever for those who do not feel as they do. Part of their educational function is an effort to instill this feeling in the lesser curators, preparators, student workers and volunteers who work for them within the various sections.

The education and entertainment of the public goes somewhat beyond the development of exhibits. Exhibits, however, are the life blood of a public museum. They don't spring into full bloom by themselves. Exhibits must be planned far in advance, sometimes over a period of years. Complete coordinated halls may be on the drawing board and building stage for five or more years. The curator is ultimately responsible for the over-all concept, the selection of materials, the design of information flow, the writing of labels (an art in its own right) and the ultimate supervision of the installation.

In this same area of responsibility is the direct contact with the public either in person, over the telephone or through the mail. Personal contact is generally to identify material which the visitor has found, to answer questions on scientific hobbies. These people we appreciate and help all we can. Many become boosters of the Museum and help as volunteers in the laboratory or in the field.

The amusing ones and the ones who are remembered with mixed emotions are those who wish to sell their fabulous finds to the Museum. At this point the Curator becomes a diplomat. He tries to maintain their friendly attitude toward the Museum while telling them that their invaluable dinosaur skull is really a pretty sad Recent cow skull. A similar problem is the concretionary mass of naturally cemented sand or clay which, in the mind of the owner, can be nothing except a petrified kidney, liver or heart. The conversation usually goes something like this:

"I know it's a petrified liver."

"Believe me, Madam, it looks like a concretion and does not show any signs of organic structure."

"Well, old Doctor Jones says it's a petrified liver and he's been treating the family for three generations! He ought to know 'cause he knows more than you do."

"All I can do, Madam, is give you my opinion. Thank you so much for showing your specimen to me."

Then there is the author of the new and revolutionary theory on the origin of everything, or the time traveler who is clutching a rock which was brought back when he or she visited "the beginning." Until my buzzer system was removed in an economy move, I had a signal to the laboratory. A certain buzz meant, "Come and rescue me from this nut, quick!" We have a revolving medal which circulates within the Section and is passed back and forth after a particularly trying visitation.

The telephone contact is equally trying sometimes. Somewhere in the megalopolis is a college teacher who assigns his students a long list of questions on the size and shapes of the skulls of the major groups of fossil horses. It seems that this information is not readily available in the standard references or texts. At least once a year a student will call and ask a long series of detailed questions with the expectation that the Curator will have all of the information on the tip of his tongue.

Every day brings its quota of letters asking for information. We try to answer all of them and give school children and adults, no matter where they write from, all the information they need or at least direct them to their public libraries and encyclopedias. (One sometimes wonders if the majority of students is aware of the public library.)

The only time this task becomes onerous is when practically every child from one or two grades in a school system will write and ask for the same information. Or the once a month prize:

"Dear Sir:

Send me all the information you have on dinosaurs. Don't take more than two pages and do it right away because my report is due tomorrow.

Abcdzy McGeenoos
99X△ Xrupt Street
Xbert, New Jersey."

When we get to Research we are approaching the reason the Curator comes to the Museum in the first place. Lured by the unlimited opportunities for research and field work, he turns down the lucrative offer of a professorship at a major university or abandons the one he already has and moves to Southern California. He is now free from the confining restrictions of the academic year and the problems of unappreciative students.

Soon the moment of truth arrives. Exhibits, public service, restricted budgets and travel permits take up most of the time and reduce the opportunity for researching. As the final blow, once again our Curator is tied to the academic year because he is probably moonlighting as a full professor at one of the local universities at a basic salary rate very much higher than his County stipend.

In spite of this he stays on at the Museum because it is in his blood and he loves it—one sometimes wonders who is the keeper and who is the minor lunatic!

History: Museum Style

By **Warren H. Schweitzer**
Museum Education Specialist

Warren Schweitzer addressing the History Workshop, a typical Saturday morning meeting of the class in the Museum Audio-visual Center.



On September 30, 1967, fifty-four juniors and seniors from twenty high schools in Los Angeles County registered for the History Workshop offered by the Division of Education of the Los Angeles County Museum of Natural History. By their registration these young men and women commited themselves to fifty hours of extracurricular learning; two hours a Saturday for twenty-five Saturdays. Why would 16, 17 and 18 year olds, who spend five days a week in school, give up twenty-five Saturday mornings to attend a workshop in a museum? Part of the answer to that question will be found in a description of the students who enroll in the program. Another part of the answer will be found in the program itself.

The members of the History Workshop are students who have been recommended by their social studies teachers on the basis of scholastic ability and achievement, and a special interest in social studies. They are motivated, therefore, by intelligence and curiosity. These qualities are coupled with expanding interest and heightened awareness at a time of life when learning ability is approaching its peak. Fortunate is the instructor with such fertile and fallow ground to cultivate. More fortunate is he who has at hand an excellent tool to exploit this opportunity. The Museum, with its exhibits and other resources, is such a tool. How is it used by the History Workshop? Just what is the History Workshop?

"The aim of the Workshop," according to the brochure published by the Education Division and distributed to Social Studies teachers, "is to supplement the curriculum of the high school student with a program of enrichment, emphasizing our cultural heritage, through the use of films, recordings, and in particular, the exhibits of the Museum. "The Workshop program," the brochure continues, "is not a course in a specific period or field of history. It is designed to make use of the resources of the Museum to add other dimensions to the student's experience." Specifically, the subject areas treated in the History Workshop are:

Physical and Cultural Anthropology

Ancient, Medieval and Renaissance History

The History of Music

United States History:
- Colonial Life
- Western Expansion
- The History of California

The above is, of course, only a very broad outline. A more detailed description of the mechanics of the Workshop program follows:

The first meeting of the group is primarily one of orientation, presenting the Museum as a source of knowledge and information, and explaining the methods to be used in the Workshop to exploit these resources. As a general introduction, the students are shown the Museum's own film, "The Museum: Gateway to perception".* This is followed by the film, "Ancient Death Trap," a TV documentary about the La Brea "tar" pits, showing specimens recovered from the pits, and the activities of paleontologists who work with these recovered materials. The students are then taken to view the assembled specimens on exhibit in the La Brea Hall.

The above illustrates the basic method used throughout the Workshop, with the exception of the section on the History of Music. A brief introduction puts the day's topic into proper perspective, while a film provides more detailed orientation. The materials in the galleries are then viewed in the light of this preparation. They are used to illustrate the concepts relevant to the topic and to prepare the ground for the subsequent topics of the program.

For example, the La Brea material serves not only to orient the student to the Museum and furnish some insights into the way real materials, studied by experts, contribute to man's knowledge of his world, but it also serves to illustrate such concepts as the relationship of species to environment and to other species, and the relationship of anatomical structure to function in an organism. This lays the groundwork for the next session of the Workshop which deals with physical anthropology.

* Additional information regarding this film will be found in the following Museum Alliance Quarterlies:

Summer, 1964, Vol. 3 No. 1, p. 10

Summer, 1967, Vol. 6 No. 1, p. 11

Autumn, 1967, Vol. 6 No. 2, p. 12



A Grecian urn – The History Workshop begins at the beginnings of Western Man's culture and heritage.



Chumash Indian – The Museum is rich in materials illustrating California's early history.

At this meeting, man's place in geologic time is located as well as his place in the taxonomic system. The Museum's Hall of Evolving Life is used for this purpose. Man's physical kinship with other species, especially those of the Primate Order, is stressed without neglecting the significant differences which place him in a separate classification.

The next four meetings deal with the most significant difference between man and other species. The South Pacific Hall and the American Indian Hall are used to illustrate man as a problem-solving and culture-creating animal. These galleries, depicting less complex cultures than our own, are ideal vehicles for demonstrating the universality of certain human problems, and the methods by which they are solved. Broadly, these problems are gathered into three main areas, defined by the physical, social and intellectual aspects of man's nature.

The first area deals with man's material existence: how he solves the problems of food, shelter and clothing. The second, the social, deals with man's relationships to his fellowmen, the problems attendant to dealing with members of an identified in - group or out - group. The third area, the intellectual, deals with the problems generated by the unknown and the uncontrollable. This is the area of ritual and magic, religion, philosophy and empirical knowledge. The exhibits also serve to illustrate man's need to embellish, to integrate art into one, two or all of these areas, which are not autonomous, but are, in varying degrees, inter-related and inter-dependent.

These discussions lead to a consideration of the conditions which must be fulfilled for a primitive culture to develop into a civilized society. The Hall of Pre-Columbian Archeology is an excellent vehicle for developing this point. In this gallery, the importance of an adequate food supply, the role of the transmission of knowledge from one generation to the next, the need for cooperation and organization in creating complex projects and programs, for example, can be readily illustrated.

Equipped with the concepts developed thus far, the student is assumed ready to better evaluate the remnants of his own culture. The remainder of the History Workshop Program is devoted to certain aspects of Western Civilization as exemplified by items which have come down to us from the past. Two trips are taken to the Los Angeles County Museum of Art to view the Ancient, Medieval and Renaissance materials on exhibit there.

The art of the Western World which appeals to the eye is complemented by an art which is comparably appealing to the ear. Six weeks are devoted to the history of Occidental music, from the plain chant of the Middle Ages to the complex compositions of the latter part of the Nineteenth Century. Using this evolution of music as illustration, certain parallels are drawn to the history of ideas. For example, Beethoven in music is equated with Hume and Kant in philosophy. Their innovations ruptured the formal fabric of the periods preceding them and paved the way for the Romantic Movement, which included a new stress upon the value of the individual. In music, this stress produced such men as Berlioz and Liszt. In the history of ideas, it contributed to democratic theories of government. Thus, we are led to the last section of the History Workshop which deals with that remarkable implementation of a democratic theory of government, the United States of America.

The materials of the Colonial Hall and The Westward Movement Gallery are used as starting points to illustrate the modifications which are made in theories under the impact of real experiences. The materials in the California Hall are used to illustrate the results of contacts between differing cultures, the amalgamations they produce, and their effects upon the values of the present.

It is difficult to assess the value of this program by objective methods. The aims of the Workshop are not such that their degree of attainment can be identified by such devices as tests and questionnaires. Basically, the objectives are to generate enthusiasm and curiosity, basic requirements in the pursuit of knowledge. From his contact with the positive, constructive and beautiful creations of **homo sapiens,** it is hoped that the student will obtain a frame of reference which keeps the present in proper perspective, so that optimism and confidence can play their essential role in the problem-solving required in a rapidly changing world.

There are hints in the verbal and written evaluations of some of the students that these objectives are at least partially achieved. Such statements as, "I have never learned so much in such a short time," "I never realized how interesting a museum can be," and, "More knowledge has come to me because of this class than I had ever dreamed," seem ephemeral and definitely lack specifics. However, they do reveal enthusiasm, and it is evident that the student's curiosity has not been betrayed. This is evidence that in the Museum we have a potent and effectual tool for augmenting the formal education of our students. We realize further that this remarkable potential is not exploited sufficiently. As a result, each year of this program is viewed as the base for improvement, and it is hoped that when its form has crystallized, it can be offered to interested adults of the community.



Ludwig van Beethoven – Music is an important factor illustrating styles of thinking in different epochs.

MUSEUM SPOTLIGHT

The New Los Angeles County Official Flag

by **C. V. Duff**
Member, Board of Governors

The citizens of Los Angeles County are most fortunate in having a Board of Supervisors who are constantly alert to the needs of the County. They originate many new ideas of value to all.

An important illustration of this activity is the new official flag of the County of Los Angeles personally designed by Supervisor Kenneth Hahn. Supervisor Hahn is chairman of the Museum Department for the Board of Supervisors. The Los Angeles County Museum of Natural History is in his district.

The new official flag of the County of Los Angeles flies today over the cultural, athletic, and educational complex in Exposition Park.

It recently took its place beside the Stars and Stripes, California Bear Flag, and City of Los Angeles Flag on poles outside the Los Angeles Memorial Sports Arena, within a few hundred feet of the County Museum of Natural History.

The new flag includes the colors blue, green, and gold.

Supervisor Hahn explains the blue field signifies clear skies, the green is to "keep Los Angeles beautiful" and the gold stands for the land of opportunity for everyone.

In the center of the blue field is the official Los Angeles County seal, also designed by Supervisor Hahn several years ago.

Gem and Mineral Show

The Oustanding Gem and Mineral Show that opened on the Mineral Rotunda in November, contains material from 38 private collections loaned to the Museum for one year. Most of the organizational work connected with the show was done by Mr. and Mrs. Victor Martin, Mrs. Marion Godshaw, and Dr. Earl Pemberton, who are shown at right.

The display contains not only minerals, meteorites, and tektites, but also examples of intarsia, polished petrified wood slabs, inlaid spheres, carved stone, faceted gems, jewelry, and several cases whose appeal is primarily educational. Over 700 people attended the receptions for the opening that included mineral and gem enthusiasts from throughout the state.





Los Angeles County Museum of Natural History
Exposition Park, Los Angeles, California 90007
Address Correction Requested

